



PEDIATRIC BLOOD AND MARROW TRANSPLANT PROGRAM

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Administration of Immune Globulin

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PBMT-GEN-024

ADMINISTRATION OF IMMUNE GLOBULIN

1 PURPOSE

- 1.1 To outline the nursing responsibilities in the first-time and subsequent administration of intravenous (IV) or subcutaneous immune globulin (IG).

2 INTRODUCTION

- 2.1 Generic Name: Immune Globulin
- 2.2 Trade Name(s): Multiple exist; contact pharmacy for current market availability.
- 2.3 Synonym(s): IVIG, IG
- 2.4 Description: Immune globulin (IG) is a pharmaceutical grade preparation containing purified, pooled antibodies from multiple donors (>3000/product) which is used to provide passive immunoprophylaxis to immunocompromised patients. Immune globulin may decrease the risk of septicemia, interstitial pneumonia and Graft versus Host Disease (GVHD) in the first 100 days post-transplant. Immune globulin also blockades the reticuloendothelial (RE) system thus prolonging the life of transfused blood products.

3 SCOPE AND RESPONSIBILITIES

- 3.1 This procedure applies to attending physicians, advanced practice providers, pharmacists and registered nurses.
- 3.2 Immune globulin may be administered intravenously or subcutaneously. The nurse is responsible for administration of immune globulin, the management of side effects and the assessment of response.
- 3.3 The physician and advanced practice providers responsibilities include ordering the medication in the electronic medical record, patient assessment and patient management.
- 3.4 Pharmacy staff members are responsible for review and evaluation of the medication order, the preparation and distribution of the medication. The BMT Pharmacist will evaluate the patient's medication profile for potential drug interactions and side effects, and also follow the patient for expected response and/or toxicity following administration in conjunction with the Provider Team.
- 3.5 Level: Interdependent (* requires an order from physician or physician designee).

4 DEFINITIONS/ACRONYMS

- | | | |
|-----|------|---------------------------|
| 4.1 | BP | Blood Pressure |
| 4.2 | D5W | 5% Dextrose in Water |
| 4.3 | GVHD | Graft versus Host Disease |
| 4.4 | IG | Immune globulin |

- 4.5 IVIG Intravenous Immunoglobulin
- 4.6 IV Intravenous
- 4.7 NS Normal Saline
- 4.8 PBMT Pediatric Blood and Marrow Transplant
- 4.9 RE Reticuloendothelial
- 4.10 SC Subcutaneous
- 4.11 SOB Shortness of Breath
- 4.12 VS Vital Signs

5 MATERIALS

- 5.1 Immune globulin is prepared by pharmacy staff
- 5.2 Alcohol swabs

6 EQUIPMENT

- 6.1 Volumetric pump
- 6.2 Cardiac monitor

7 SAFETY

- 7.1 NA

8 PROCEDURE

- 8.1 Precautions:
 - 8.1.1 Use cautiously in patient with fluid overload or sensitivity
 - 8.1.2 Do not give if Total Protein is > 9mg/dl without physician or provider approval prior to administration.
- 8.2 Route of Administration:
 - 8.2.1 Intravenous (IV) via weekly infusions or on an as needed (prn) based on target IgG levels. Infusion rate is gradually increased for infusion as outlined below in 8.4.
 - 8.2.2 Subcutaneous (SC) via weekly injections or on an as needed (prn) based on target IgG levels. SC administration is outlined below in 8.4.
- 8.3 Matched Sibling transplant patients are to receive immune globulin weekly until day 30 and then will receive as needed when IgG levels are 400 or below, or as per provider order.
- 8.4 Dosage:
 - 8.4.1 Route specific; indication specific; IgG level specific
 - 8.4.1.1 IV: Dosing varies per brands: 100 – 1000 mg/kg.

- 8.4.1.2 SC: Typical dose varies across brands, but total dose or volume should be divided into sufficient number of syringes (i.e. 3 or 4 syringes or bags) to ensure adequate maximum volume for SC administration site. Contact pharmacy for specifics regarding this route of administration.
- 8.5 This medication is incompatible with other medications and the medication line should be flushed with normal saline or D5W before and after IV administration.
- 8.6 Side Effects: Adverse effects, including anaphylaxis, are most common with the first dose of immune globulin, usually occurring in the first 30-60 minutes of IV administration, and therefore, frequent monitoring is required during the initial dose. Some patients will require premedication with diphenhydramine, acetaminophen, and/or steroids to minimize infusion reactions.
 - 8.6.1 Flushing
 - 8.6.2 Chills
 - 8.6.3 Fever
 - 8.6.4 Muscle cramps, myalgia
 - 8.6.5 Hypotension
 - 8.6.6 Wheezing
 - 8.6.7 Anaphylaxis (hypotension, shortness of breath (SOB), respiratory distress, chest pain/tightness, shock)
 - 8.6.8 Infusion site erythema
 - 8.6.9 Headache
- 8.7 Intravenous Immune Globulin Administration:
 - 8.7.1 Discuss possible side effects and symptom management strategies with the patient.
 - 8.7.2 Have oxygen, and suction available for emergency use in event of anaphylaxis
 - 8.7.3 Pre-medicate patient with acetaminophen, diphenhydramine, and/or hydrocortisone if ordered.
 - 8.7.4 Place patient on cardiac and blood pressure (BP) monitor as follows or per physician or provider order:
 - 8.7.4.1 For the first infusion or infusions greater than 8 weeks between doses:
 - 8.7.4.1.1 Obtain and document baseline vital signs (VS).
 - 8.7.4.1.2 Monitor and document VS at beginning of infusion, then with every 15 minute rate change, and at the end of infusion.

- 8.7.4.2 For subsequent doses:
 - 8.7.4.2.1 Obtain and document baseline vital signs (VS).
 - 8.7.4.2.2 Then, as needed per patient condition.
- 8.7.5 Verify dosage and patient identity.
- 8.7.6 Infusion rates are specified in the provider order or defined on the medication administration record per internal pharmacy standards. Generally intravenous immune globulin is infused following a pre-determined rate escalation. An example for Gamunex® 10% is as follows:
 - 8.7.6.1 Gamunex® 10%
 - 8.7.6.1.1 0.6 ml/kg per hour X 15 minutes
 - 8.7.6.1.2 1.2 ml/kg per hour X 15 minutes
 - 8.7.6.1.3 2.4 ml/kg per hour X 15 minutes
 - 8.7.6.1.4 4.8 ml/kg per hour until complete
- NOTE:** For brands OTHER than Gamunex® 10% or for SC administration, contact pharmacist for administration and rate guidelines.
- 8.7.7 Slow infusion rate if patient experiences headache, fever, chills, nausea, vomiting, joint or back pain, myalgia, chest tightness, palpitations, dizziness, sweating, itching, rash, flushing, or irritation at line site.
- 8.7.8 If hypotension or anaphylaxis occurs:
 - 8.7.8.1 Discontinue IV infusion immediately.
 - 8.7.8.2 Initiate the Pediatric Hypersensitivity Protocol.
 - 8.7.8.3 Notify the physician or provider team.
 - 8.7.8.4 Maintain patency of line with NS or D5W and treat anaphylaxis as per the Pediatric Hypersensitivity Protocol physician or provider orders.
- 8.8 Documentation: Document all VS and immune globulin volume per unit standards.
- 8.9 Reportable Conditions:
 - 8.9.1 Anaphylaxis (hypotension, SOB, respiratory distress, chest pain/tightness, shock)
 - 8.9.2 Fever
 - 8.9.3 Chills
 - 8.9.4 Hypotension

8.9.5 Wheezing

8.9.6 Aseptic Meningitis

9 RELATED DOCUMENTS/FORMS

9.1 N/A

10 REFERENCES

10.1 2003 THOMPSON MICROMEDEX

10.2 Skidmore-Roth, L Mosby's Drug Guide for Nurses: 2000 Update. 3rd Ed. Mosby, New York, 2000.

10.3 SOP: Care of the Patient Receiving Intravenous Gamma Globulin (IVIG). NIH Clinical Center Nursing Department. Available www.cc.nih.gov/nursing/ivig.html

10.4 Spratto, GR. PDR Nurse's Handbook, 2000. 5th Ed. Delmar Publishers, New York, 1999.

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
07	S. McCollum	<ul style="list-style-type: none"> Removed section 2.2 reference to all brand names as these are rapidly changing in availability on the market at any given time. Defined acronyms throughout. Section 8.7.4 updated to reflect current monitoring schedule of vital signs during infusion of first dose and subsequent doses of IVIG. Section 8.7.8 updated to reflect the current policy of activating the Pediatric Hypersensitivity Protocol in the event of an anaphylactic reaction.

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PBMT-GEN-024 Administration of Immune Globulin**Author**

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